

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

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Weekly Bulletin



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GUY P. JONES
EDITOR

Fecal Examinations for the Detection of Carriers

By R. V. STONE, Bureau of Laboratories, Los Angeles County Health Department

Early in the phase of bacteriological techniques applied to sanitation, the use of the science in detecting carriers seemed logical. The success in cholera prevention by Dr. Herman Biggs, and his associates of New York City marked, in 1893, the beginning of carrier search through a municipal laboratory in this country. It was natural to extend such a search into the field to control other communicable diseases.

Today, we realize the indiscriminate search for carriers becomes a matter of economics. Does the money expended for such work, constitute a good return on the investment? The answer is, emphatically "No!" The time to search for typhoid carriers is in the release of convalescent cases, and intimate contacts with such individuals. A portion of these cases will become carriers. Follow-up work on these persons would concentrate the potential group for carrier detection. A random examination of a population renders the detection of an occasional carrier of typhoid as practically an accidental chance.

New York State found that 39.2 per cent of a series of 287 carriers had had their attack of typhoid fever 20 years or more previous to their detection.

Stebbins and Reed (1) found that:

1. Five hundred and seventy chronic typhoid carriers have been declared in New York State from 1911 through 1935.

2. Exclusive of 59 carriers discovered in state institutions, 72 per cent of all carriers were discovered by epidemiological investigation of sporadic cases of typhoid fever.

3. The incidence of typhoid fever among the household contacts of carriers was found to be 42 times that in the general population.

4. The ratio of cases to carriers before and after discovery was significantly different due entirely to a high ratio in the first 10 years of "carrier age" before discovery.

5. The attack rates among unvaccinated household contacts of carriers was studied by means of "exposure age" and "carrier age."

6. The attack rate among unvaccinated household contacts of carriers was found to be 5 times that of vaccinated contacts.

The health officer is interested in accomplishing the most for the minimum in time and expense. Routine stool examinations are time-consuming and expensive. The yield is slight.

There are several methods for the detection of carriers:

1. Epidemiological investigation. 2. Release specimens from all clinical cases. 3. Routine food handler examinations.

In New York City during the period 1915 to 1935 a total of 565 carriers have been discovered. Fifty-

two and seven-tenths per cent (or 308 of these) were discovered by means of epidemiological investigation; 42 per cent (or 227) by means of release cultures, and 5.3 per cent (or 30) by means of routine food handler examinations. It will be of interest to mention that those 30 carriers detected represent three and one-half million routine food handler examinations—or one carrier for every 100,000 examined. On the basis of these findings the city board of health rescinded that section of the sanitary code requiring yearly health examination of food handlers.

In New York state (exclusive of New York City) up to January 1, 1936, 570 carriers have been found. Of these 72.4 per cent (or 370) were found by epidemiological investigation; (101 or) 19.8 per cent by release specimens; 2.5 per cent (or 13) by routine food handler examination; 5.3 per cent (or 27) by accidental means. During the period 1911 to 1928 before release cultures were uniformly taken there were 39,074 cases of typhoid fever and 39 or 0.1 per cent carriers were found, while during the period 1929-1934 there were only 2704 cases while 61, or 2.3 per cent were found to be carriers.

In Connecticut by means of 91,257 food handler examinations 71 carriers were found at an average estimated cost of \$677.00 per carrier found. (In New Mexico 20 carriers were found by the examination of 7040 food handlers.)

It has generally been concluded that routine food handler examination is of value only principally on raw milk dairies and in institutions. (So that the methods producing the best results are epidemiological investigations of each case and release cultures on recovering cases.)

The American Public Health Association committee of the laboratory section consisted of Minna Crooks Young, A. L. MacNabb, Ruth Gilbert, S. A. Koser, M. P. Ravenel and Friend Lee Mickle. They made a preliminary report in 1934-35 and a subsequent opinion in 1935-36 (2). Their comment was as follows: "It is felt by the committee that the indiscriminate collection and examination of specimens from food handlers are undesirable, and that such examinations should be made only where called for by epidemiological or clinical findings."

Dr. William H. Best (4) of the New York City Health Department reports: "After an experience of 18 years with medical examinations of food-handlers in New York City, during the last 11 of which annual examination and certification of all food-handlers was compulsory, by amendment to the Sanitary Code in September, 1934, such examination and certification was discontinued. This action

of the Board of Health was based on the following considerations:

1. The examination of food-handlers by private physicians can not be accepted as reliable.

2. The cost of physical examinations of food-handlers made exclusively by the Department of Health is not commensurate with the public health benefits obtained.

3. The most careful physical examination does not reveal the most important conditions that may be transmitted by food-handling.

4. In order to be able to certify that a food-handler is free from communicable disease, at least a chest X-ray, a Wassermann, and a stool examination for typhoid, paratyphoid and amebic and bacillary dysentery carrier must be made. The cost of such an examination is almost prohibitive.

5. Even if such a complete examination were made, there is no assurance that the food-handler would remain free of communicable disease during the tenure of the certificate.

6. Too much emphasis has been placed on the value of medical examinations as a means of preventing the spread of disease through food handling, especially as it relates to such communicable conditions as venereal diseases, tuberculosis, and skin conditions.

The cost was \$43,000 annually for only one-third of all food-handlers. To have examined the entire group would cost, conservatively, \$100,000. The cost per typhoid carrier would have been \$50.00! The two-thirds not surveyed by the New York City Department were examined by private physicians, at the usual fee of \$1.00. The cost on this basis was approximately figured at \$260,000 per year or a cost per carrier of \$130,000.

I submit, is such a cost commensurate with the public health benefits obtained? The value of public health work is measured by the degree to which sickness and death in a community are reduced, and the desirability of adopting any particular program must be gauged by the comparative yield for the outlay in effort and money."

Dr. J. L. Pomeroy, Health Officer of Los Angeles County for the last 25 years has observed through experience and opinion: "It isn't the hazard of ten waitresses contaminating the glassware that serves 1000 people that is a matter for concern. It is the 1000 persons whom the ten waitresses have served; there is the real danger! Adequate washing and sanitization of glassware and other service utensils is fundamental for practical control."

His drafting of the Los Angeles County Health Code (5) devotes all of Chapter II to methods for

sanitization in the food establishment. *Emphasis is placed upon food handling technique* rather than on the handler of the food. Section 207 and 208 of this code is an innovation. It is a sensible approach to physical examination if history or other clues indicate such are desirable. *However, the emphasis here in this section is actually placed upon health information for the food-handler.*

Sec. 207. REGISTRATION AND PHYSICAL EXAMINATION OF FOOD HANDLERS. It shall be unlawful for any owner or operator of any public eating place to employ personnel in such places until such persons have registered with and been approved by the County Health Officer. It shall be the duty of every person before he is employed in any public eating place, or within seven (7) days thereafter, and annually thereafter, to report to the office of the County Health Department nearest his place of employment and apply for a registration card. Such cards are not transferable. All such persons applying for registration shall give a complete, accurate and verified history of their health and shall submit to a physical examination when required by the Health Officer.

It shall be the duty of the Health Officer to thoroughly instruct such persons at least annually and oftener when desirable, in the hygiene and sanitation of public eating places. Upon the payment of a fee of fifty (50) cents a certificate of registration shall be issued, which certificate shall be good for one (1) year from date of issuance. Such cards are revocable by the County Health Officer whenever the holder may become infected with a communicable disease.

Sec. 208. REPORTS CONCERNING EMPLOYEES. It shall be the duty of the operator or owner of all public eating places to report as soon as possible to the Health Officer any illness of a communicable nature of any employee of said establishment.

Budgets are hard to obtain for the investments that bring proven returns. A check-up on a food-handler twice a year still allows a remaining 363 days of "unprotected" service in a restaurant; a chance for 1089 "unprotected" meals per regular patron. It is certainly much wiser to train a waitress what not to do, than to slap her wrist, after she has done it.

REFERENCES:

- (1) Stebbins, E. L., and Reed, Elizabeth, A. J. P. H., 27:233 (Mar. 1937).
- (2) Am. Pub. H. Ass'n. Year Book 1935-36, pages 98-100.

(3) *Ibid.*, 1934-35.

(4) Best, Wm. H., A. J. P. H., 27:1003 (Oct. 1937).

(5) Luncheon discussion by Dr. J. L. Pomeroy.

(6) Los Angeles County Ordinance. No. 3275 N. S., Section 120, of Chapter One and Sections 201, through 212 (All of Chapter II).

(7) Weekly Bulletin, California Department of Public Health, October 9-16, 1937. Vol. 38:145-150.

EPIDEMIC POLIOMYELITIS

Investigations into cases of poliomyelitis were made during September in many communities of the state at the request of local health officers concerned. These investigations were for the purpose of establishing diagnoses of suspected cases and also for the purpose of determining the prevalence of the disease within certain areas. So far, reported cases have been well scattered and there has been no unusual prevalence in any single area, although increases in incidence have been experienced throughout most of the state.

DEATHS FROM LIGHTNING

Deaths from lightning occur seldom in California, as compared with other states. Severe electrical storms occur in the mountainous districts of California, however, during the summer months. In the past ten years, no less than thirteen people have been killed by lightning in California. The greatest incidence was in 1937 when 7 such deaths occurred. There were 2 deaths from lightning in 1936 and one death occurred in each of the following years: 1930, 1932, 1935, and 1938.

EXAMINATION IN PUBLIC HEALTH NURSING

An examination for certificate in Public Health Nursing will be held by the California State Board of Public Health on Saturday, December 9, 1939, in both San Francisco and Los Angeles.

Applications for entrance upon this examination should be made at once with the Public Health Nursing Services, State Department of Public Health, 305 State Building, San Francisco.

There can be no enduring peace among men or nations except as the rules and practice of society allow and encourage all men and all nations free and equal opportunity to seek fulfillment for their lives by civilized means.—*Arthur E. Morgan, Former President of Antioch College.*

MORBIDITY

Complete Reports for Following Diseases for Week Ending October 14, 1939.

Chickenpox

94 cases: Alameda County 2, Alameda 1, Albany 3, Oakland 7, Fresno County 1, Fresno 2, Kings County 4, Los Angeles County 5, Alhambra 1, Los Angeles 5, Pomona 2, Torrance 1, Madera County 3, Chowchilla 1, Monterey County 1, Monterey 1, Orange County 4, Santa Ana 2, Sacramento 1, San Diego 2, San Francisco 18, San Joaquin County 1, San Luis Obispo County 13, San Mateo 2, Santa Barbara 2, Santa Clara County 1, Palo Alto 2, San Jose 1, Santa Clara 1, Watsonville 1, Shasta County 1, Ventura County 1, Marysville 1.

Diphtheria

14 cases: Contra Costa County 2, Los Angeles County 3, Los Angeles 4, Madera County 1, Sacramento 1, Oceanside 1, Yuba County 1, Nevada City 1.

German Measles

11 cases: Alameda 2, Albany 1, Berkeley 1, Fresno County 1, Los Angeles County 1, Long Beach 1, Los Angeles 2, San Diego 1, Burlingame 1.

Influenza

5 cases: Oakland 1, Los Angeles County 1, Los Angeles 2, Santa Monica 1.

Malaria

2 cases: Yolo County 1, California 1.*

Measles

42 cases: Berkeley 1, San Leandro 1, Fresno 1, Bakersfield 1, Los Angeles County 1, Compton 1, Los Angeles 5, Montebello 1, San Fernando 2, Monterey County 1, Anaheim 1, Fullerton 1, San Diego County 6, San Diego 8, San Francisco 2, San Joaquin County 1, Stockton 2, San Luis Obispo County 1, Santa Barbara 1, San Jose 2, Tulare County 1, Davis 1.

Mumps

134 cases: Alameda County 2, Albany 1, Berkeley 1, Oakland 4, Gridley 3, Contra Costa County 1, Fresno County 1, Fresno 2, Kern County 2, Los Angeles County 2, Alhambra 1, Long Beach 12, Los Angeles 7, Pasadena 1, South Pasadena 2, Monterey Park 1, Sausalito 1, Monterey County 3, Orange County 3, Huntington Beach 1, Banning 1, San Diego 1, San Francisco 16, San Joaquin County 2, Stockton 3, Tracy 1, Burlingame 1, San Mateo 3, Santa Barbara County 1, Santa Barbara 2, Santa Maria 3, Santa Clara County 6, Palo Alto 5, Shasta County 6, Sonoma County 2, Tulare County 9, Dinuba 1, Yolo County 4, Davis 16.

Pneumonia (Lobar)

32 cases: Berkeley 2, Oakland 3, Kings County 1, Los Angeles County 7, Alhambra 1, Los Angeles 11, Madera County 1, Redlands 1, San Diego 1, San Francisco 3, Sonoma County 1.

Scarlet Fever

84 cases: Alameda County 2, Berkeley 3, Hayward 1, Gridley 1, Contra Costa County 1, Fresno County 2, Imperial 1, Los Angeles County 10, Compton 2, El Segundo 1, Glendale 1, Los Angeles 21, Pomona 1, South Gate 2, Maywood 1, Madera County 1, Monterey County 4, Monterey 1, Salinas 1, Grass Valley 1, Huntington Beach 2, Santa Ana 1, La Habra 1, Riverside 1, Sacramento 1, La Mesa 1, San Diego 3, San Francisco 2, San Joaquin County 6, Redwood City 1, Santa Clara County 2, San Jose 1, Watsonville 1, Dinuba 1, Porterville 1, Davis 1.

Smallpox

3 cases: Kings County 1, San Joaquin County 2.

Typhoid Fever

18 cases: Fresno County 2, Fresno 1, Kings County 1, Sacramento County 2, San Bernardino 1, San Francisco 1, Stockton 1, San Jose 1, Santa Cruz 1, Sutter County 2, Tulare County 1, Yuba County 1, Marysville 1, California 2.*

Whooping Cough

83 cases: Alameda County 2, Oakland 1, Del Norte County 5, Fresno County 3, Fresno 1, Eureka 2, Inyo County 1, Kings County 2, Los Angeles County 12, Long Beach 1, Los Angeles 13, Pasadena 2, South Gate 2, Merced County 1, Monterey County 1, Napa County 1, Fullerton 1, Orange 5, Santa Ana 3, San Jacinto 2, San Diego 1, San Francisco 5, San Luis Obispo County 2, Santa Clara County 1, Sonoma County 4, Tulare County 3, Dinuba 1, Exeter 1, Tulare 4.

Meningitis (Epidemic)

1 case: Los Angeles County.

Dysentery (Amoebic)

10 cases: Fresno 1, Kern County 1, Los Angeles County 1, Claremont 1, Long Beach 1, Orange County 1, Seal Beach 2, San Francisco 1, Tuolumne County 1.

Dysentery (Bacillary)

17 cases: Los Angeles County 2, Los Angeles 2, San Fernando 1, San Francisco 5, San Joaquin County 2, Shasta County 1, Sonoma County 1, Tulare County 1, Stockton 2.

Leprosy

1 case: California.*

Pellagra

1 case: Los Angeles.

Poliomyelitis

31 cases: Oakland 3, Fresno 2, Bakersfield 1, Los Angeles County 1, Alhambra 1, Azusa 1, Long Beach 2, Los Angeles 7, Monterey 1, Napa County 1, Hollister 1, San Diego 2, Stockton 1, Watsonville 1, Tulare County 1, Yolo County 1, Davis 1, Woodland 1, Yuba County 1, California 1.*

Tetanus

1 case: Kings County.

Trachoma

3 cases: Torrance 1, Tulare County 2.

Encephalitis (Epidemic)

1 case: Fresno County.

Paratyphoid Fever

3 cases: San Francisco 1, Palo Alto 2.

Trichinosis

1 case: San Francisco.

Typhus Fever

2 cases: Los Angeles.

Botulism

1 case: Arcadia.

Jaundice (Epidemic)

1 case: Shasta County.

Food Poisoning

6 cases: San Francisco.

Undulant Fever

5 cases: Eureka 1, Kings County 1, Fullerton 1, Orange 1, San Francisco 1.

Coccidioidal Granuloma

3 cases: Kern County 2, Bakersfield 1.

Actinomycosis

1 case: San Leandro.

Septic Sore Throat

3 cases: Indio 1, Burlingame 1, Lompoc 1.

Relapsing Fever

2 cases: Placer County 1, San Bernardino County 1.

Psittacosis

1 case: Santa Barbara County.

Rabies (Animal)

3 cases: Berkeley 1, Los Angeles 1, San Mateo County 1.

* Cases charged to "California" represent patients ill before entering the State or those who contracted their illness traveling about the State throughout the incubation period of the disease. These cases are not chargeable to any one locality.

Education and social existence are reciprocal. Its informative side has to be essentially social elucidation. So that the ideal teacher can never be a specialist, he has to have a working conception of the world as a whole into which his teaching fits.—H. G. Wells.

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